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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/029,129	12/20/2001	Philip S. Lin	KCX-460 (17071)	2785

7590

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EXAMINER

HUG, ERIC J

ART UNIT

PAPER NUMBER

1731

DATE MAILED: 02/13/2003

8

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	Application No. 10/029,129	Applicant(s) LIN ET AL.	
	Examiner Eric Hug	Art Unit 1731	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 December 2001.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-45 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5, 7, 9-14, 17, 19-35, 39-41 and 43-45 is/are rejected.
- 7) ☒ Claim(s) 4, 6, 8, 15, 16, 18, 36-38 and 42 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 March 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Drawings***

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: W, center winding device, and 32a, outer region of roll. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

1. Claims 21-33 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The claims are directed for a system for controlling the caliper of a fibrous web. The system as claimed comprises a calender device that forms a nip, a reel with a cylindrical surface disposed near the calender device, and a roll (for winding the web) which is slidably disposable onto and removable from the cylindrical surface of the reel. There is no disclosure in the specification of a reel used in this manner nor is there disclosure for positioning a roll relative the

surface of such a reel. The "reel" disclosed by Applicant pertains to a backing roll in the adjustable calender. This is different from what is claimed.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 5, 7, and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Bichot et al (US 4,583,687). Bichot discloses a controlled winding method for forming rolls of highly compressible web materials such as mineral felts, an example which is described in detail, and also kraft papers (column 3, line 33). In accordance with a predetermined material thickness, the material is wound in such a manner that it is uniformly compressed along its entire length during winding. To achieve constant thickness and uniform compressibility of the material as it is being wound into a roll, a pressure is exerted on the material by a compression (calender) roller, which forms a nip with an underlying web support belt, such that the pressure on the material grows with an increasing number of turns of rolled material. This increased compression compensates for the fact that under normal winding conditions (i.e. winding without compression) the material at the center of the roll will become more compressed than the material at the periphery of the roll. Thus, Bichot teaches a method of controlling caliper (thickness) of a web as it is being wound. Prior to winding, the web is conveyed through a nip and as the diameter of the wound roll increases, the nip pressure is increased, thus decreasing the

caliper and compensating for caliper reduction as the roll diameter increases. The winding machine used by Bichot may be disposed directly at the end of a production line (column 3, lines 14-15). The compression is systematically increased (micro-adjustments) which follows a computer control algorithm based on the initial thickness of the web and on a sensor signal indicating the length of the rolled up material.

3. Claims 10-13, 17, 19, and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Myren (US 6,036,137). Myren discloses a winding apparatus for a tissue paper comprising a center drive reel spool and a reel drum that forms a nip with a building parent roll of paper wound onto the reel spool, whereby the nip pressure between the reel drum and parent roll is varied as the parent roll diameter increases. The purpose is to obtain an internal pressure distribution within the roll such that the peak pressure at the core region as per conventional winding operations is avoided. Thus, Myron teaches providing a tissue to a center drive winding device and controlling nip pressure to provide uniform caliper as the tissue is being wound onto a roll. The nip pressure is controlled by a feedback loop based on sensed measurements of the roll diameter and is incrementally increased as the roll diameter increases.

4. Claims 34, 35, 39, 40, and 43-45 are rejected under 35 U.S.C. 102(b) as being anticipated by Sharma et al (US 4,573,402). Sharma discloses a caliper control system for a material web, such as paper, passing between two calender rolls with an adjustable nip. The control system overcomes problems in reel building and reel hardness due to variations in the cross-direction caliper. After calendering, the paper is passed to a reel to form a roll. Sensors monitor the roll

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hardness and uniformity of the reel during the reel building process. The uniformity of the compacting action of the calender is then controlled by localized control of the nip pressure based on the sensed measurements. A computer control system controls temperature actuators that act on the calender rolls to change the nip pressure.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bichot et al (US 4,583,687) in view of Moller et al (US 5,988,557). Bichot discloses the controlled winding system described above for a compressible material web at the output of a production line. Bichot does not disclose using the system in a rewinding operation following the preliminary winding of the web.

Moller discloses a winding apparatus to provide wound paper rolls having very specific properties with regard to the winding hardness. Moller states: "The winding hardness should, drop from a certain initial value to an end value. The drop should be as uniform as possible from the first inside layer to the last outside layer. It should have a certain gradient, i.e., it should not be too steep or too shallow. In no case should the profile of the winding hardness show abrupt sudden drops. No radial or tangential stresses, which could impair or destroy the paper web, should occur in the paper roll." This is in essence the purpose of the invention of Bichot. In

addition Moller states: "Winding machines for winding up paper webs can be arranged at the output end of a paper machine to roll the paper web arriving there into a roll (a so-called Pope-type reel). However, those machines are also used to rewind a finished paper roll so as to produce rolls of a very specific winding quality". Therefore, at the time of the invention, it would have been obvious to one skilled in the art to provide the controlled winding system of Bichot in a rewinding operation, where a web is wound from a parent roll to a secondary roll, so that the same quality of winding can be achieved as obtained with the parent roll.

6. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Myren (US 6,036,137) in view of Moller et al (US 5,988,557). Myren discloses the winding apparatus described above for winding a tissue paper into a parent roll. However, Myren does not disclose using the method for unwinding the web from the parent roll to a secondary winder.

Moller discloses a winding apparatus to provide wound paper rolls having very specific properties with regard to the winding hardness. As described above, Moller states that the same quality of winding is desired in rewinding operations. Therefore, at the time of the invention, it would have been obvious to one skilled in the art to provide the winding apparatus of Myren in a rewinding operation where a web is wound from a parent roll to a secondary roll, so that the same quality of winding can be achieved as obtained with the parent roll.

7. Claim 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sharma et al (US 4,573,402) in view of Moller et al (US 5,988,557). Sharma discloses the caliper control system in a paper machine described above. Sharma uses the control system before winding the

paper in a parent roll, but does not use the control system for unwinding the web from the parent roll to a secondary winder.

Moller discloses a winding apparatus to provide wound paper rolls having very specific properties with regard to the winding hardness. As described above, Moller states that the same quality of winding is desired in rewinding operations. Therefore, at the time of the invention, it would have been obvious to one skilled in the art to provide the caliper control system of Sharma in a rewinding operation where a web is wound from a parent roll to a secondary roll, so that the same quality of winding can be achieved as obtained with the parent roll.

***Allowable Subject Matter***

Claims 4, 6, 8, 15, 16, 18, 36-38, and 42 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Claims 4, 15, and 42 are allowable, because the prior art does not disclose or suggest using a caliper control method or apparatus for adjusting and increasing the pressure applied to a cellulosic web as it is wound onto a roll, whereby the method is used in the step of rewinding a web from a roll onto a packaging roll to provide uniform caliper throughout the packaging roll.

Claims 6, 16, and 36-38 are allowable, because the prior art does not disclose or suggest controlling the caliper uniformly throughout a wound roll based on measurements from a caliper sensing device. The prior art methods described above control roll building and web compression based on the growing diameter of the roll or the roll hardness, not based on the



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caliper of the web itself. Prior art caliper control systems based on caliper measurements are for controlling caliper profiles, not for providing a uniform caliper throughout a wound roll.

Claim 8 is allowable, because the prior art does not disclose or suggest using a caliper control method for adjusting and increasing the pressure applied to a web as it is wound onto a roll, whereby the caliper control is performed in a converting operation utilizing a calender and feedback control. Although calenders are used in web converting operations, they are operated at fixed nip openings for providing a constant caliper at the exit of the calender.

Claim 18 is allowable, because the prior art does not disclose or suggest using adjustable calender rollers for increasing nip pressure and providing uniform caliper throughout a wound roll of tissue. The above method for tissue (Myren) utilizes a calender roll which bears against the roll of the paper being wound upon the reel rather than a pair of calender rolls separated from the reel. Although calender rollers are used in tissue making machines just prior to winding, they are operated at fixed nip openings for providing a constant caliper at the exit of the calender.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Hu (US 4,921,574) discloses a paper machine comprising a calender stack, a reel, a caliper profile scanner after the caliper stack and before the reel, a caliper profile analyzer, a feedback control loop, and a means for controlling the compressive pressure applied to the sheet by the calender based on the measured caliper profile.

Wostbrock (US 5,743,177) discloses a caliper control system for varying the nip pressure in a calender. The thickness of a paper web is monitored following the calendering operation, and then the calender nip pressure is varied through a combination of mechanical adjustment for coarse caliper control and temperature adjustment for fine caliper control.

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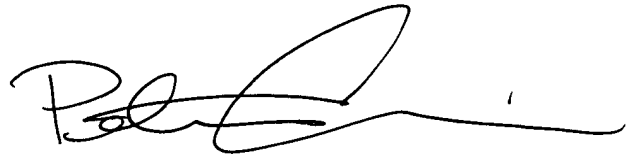
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric Hug whose telephone number is 703 308-1980. The examiner can normally be reached on Monday through Friday, 9:00 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 703 308-1164. The fax phone numbers for the organization where this application or proceeding is assigned are 703 872-9310 for regular communications and 703 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308-0651.



jeh  
February 5, 2003



**PETER CHIN  
PRIMARY EXAMINER**